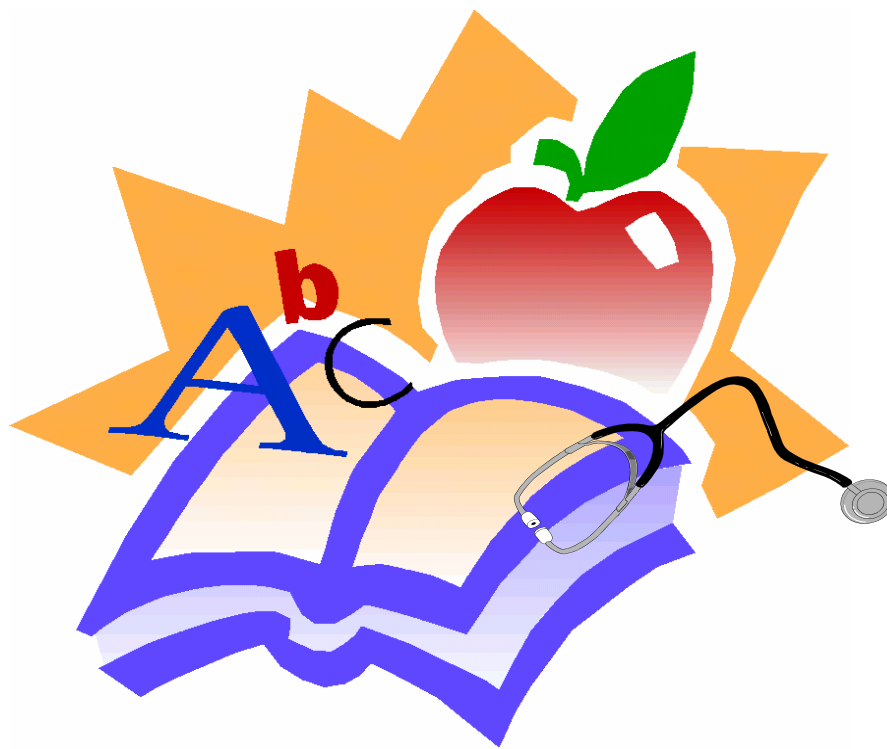


North Carolina Annual School Health Services Report For Public Schools

Summary Report of School Nursing Services
School Year 2006-2007



North Carolina
Department of Health and Human Services
Division of Public Health
Women's & Children's Health Section
School Health Unit



State of North Carolina
Department of Health and Human Services
Division of Public Health • Children and Youth Branch
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North Carolina Annual School Health Services Report for Public Schools

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EXECUTIVE SUMMARY

The number of school children in North Carolina increased from 1.36 million in 2005-2006 to 1.39 million in 2006-2007, nearly 2% growth. At the same time, the number of full time school nurse positions increased from a full time equivalence of 868 to 1,034. The ratio of school nurse to students improved from 1:1,571 in 2005-2006 to 1:1,340 in 2006-2007. Though improved, this ratio is almost double the ratio of 1:750 recommended by the American Academy of Pediatrics, the Centers for Disease Control and Prevention, and the National Association of School Nurses.

School nurses in North Carolina are employed by a variety of agencies. Of the school nurses working in public schools, local education agencies employ nearly half, 49%. Local health departments employ one quarter, alliances or combinations employ nearly another quarter, and hospital/health care systems employ the remaining three percent. Funding for school nurse positions comes from a variety of sources including local and state funds, federal Title V block grants, categorical funds, and public and private foundations.

National certification in school nursing is the standard by which school nurses are judged to have the knowledge and skills necessary to provide health services in the school setting. In 2006-2007, the percentage of nationally certified school nurses remained at 43% of the school nurse workforce.

A critical function of school nurses is identifying students with chronic health conditions. The number and percentage of students with chronic health conditions continues to increase. In 2006-2007, school nurses identified 83,440 students with asthma, an increase of more than 2,000 students from the previous year. Almost 4,500 students with diabetes and more than 18,000 students with life-threatening allergies were identified. In addition to identifying these students, school nurses developed individual health care plans and trained school staff to give necessary medications and perform medical procedures ordered by health care providers.

School nurses provided more than 65,000 health counseling sessions to students and staff, and nearly 27,000 health education programs in either one-on-one or group settings. They facilitated vision, hearing and dental screenings conducted in their schools, and more than 14,000 students were referred for comprehensive eye exams. Almost 28,000 students were authorized to receive medication at school every day, and school nurses ensured that this was done in a safe manner.

School nurses work with their local School Health Advisory Councils to develop and implement local programs designed to prevent illness and promote health that are mandated by the North Carolina School Board Association Healthy Active Children policy. They also assist with disaster/emergency planning for their communities.

As the health needs of children in school continue to grow, so must the availability of school nurses, until the recommended ratio of 1:750 is reached and there is a school nurse in every school in North Carolina.

NORTH CAROLINA ANNUAL REPORT OF SCHOOL HEALTH SERVICES IN PUBLIC SCHOOLS

SCHOOL YEAR**2006-2007**

This report is compiled from data submitted by school nurses, based on their knowledge of health services provided by school nurses and other health professionals in their schools. Except where otherwise noted, the data is from a composite report created by each local education agency's (LEA) school health staff, and by regional state school nurse consultants. It also includes data reported by the North Carolina Department of Public Instruction (DPI), and reports on health services in North Carolina Public Schools only. It does not include data from state residential, private, charter or federal schools.

SURVEY POPULATION

Number of LEAs (local education agencies) in North Carolina:	115
Number of LEAs responding to survey:	115 (100%)
Number of public school students in North Carolina ¹ :	1,386,363
Number of school nurse full time equivalencies (FTEs ²):	1,034

Student Population, School Nurse Staffing, and Nurse to Student Ratios

Number of:	School Year 2002-2003	School Year 2003-2004	School Year 2004-2005	School Year 2005-2006	School Year 2006-2007
LEAs	117	117	115	115	115
Schools	2,171	2,186	2,182	2,227	2,338
Students	1,279,468	1,311,163	1,332,009	1,363,695	1,386,363
School Nurse FTEs	667.24	691.11	836.06	867.86	1,034
Average NC School Nurse/Student Ratio	1:1,918	1:1,897	1: 1,593	1:1,571	1:1,340

School nurse/student ratios

School nurses are registered nurses (RNs). The national standard for the school nurse to student ratio is 1:750 for general student population, 1:250 for students with special health needs, and 1:125 for students with severe and profound disabilities. A number of school nurses are employed part time. For this report, school nurse to student ratios were based on **full-time equivalencies (FTEs)** of positions budgeted for school nurses to work in local education agencies (LEAs). There were 1,034 FTE budgeted school nurse positions during the 2006-2007 school year.

The school nurse to student ratio varies widely across the state. At the end of the 2006-2007 school year, the statewide average ratio of school nurse to student was 1:1,340. Thirty-one LEA's met the target ratio of 1:750. The ratios during the 2006-2007 school

¹ Final school year average daily membership (ADM) as reported by NC DPI, July 2007

² FTE = Full Time Equivalency for school nurse positions (37.5 or more hours/week)

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year ranged from 1:209 in Hyde County to 1:3,983 in Davidson County. For a breakdown of school nurse to student ratio by LEA, see Appendix C, page 17.

Pre-kindergarten (Pre-K) Students

Increasing numbers of Pre-K students are enrolling in North Carolina's public schools. Most students in these programs are developmentally delayed, have disabilities, and/or have special health care needs. School nurses serve these students in addition to those in grades K-12. Pre-K membership numbers are not included in reports of Average Daily Membership and are not included in the formula that results in the annual school nurse to student ratio, yet the care of Pre-K students impacts the daily work of school nurses in a number of important ways.

Funding for School Nurses

Funding for school nurse positions comes from a variety of sources and combinations, including local tax revenues, state and federal funding through LEAs and local health departments, hospital alliances, federal Title V block grant and categorical funds, and public and private foundations.

In recognition of the enormous health needs of school age children and the linkages between health and academic success, the North Carolina General Assembly included funds for a School Nurse Funding Initiative (SNFI) in its 2004 ratified budget and directed DHHS/DPH to award funds to areas of greatest economic need and greatest health problems. One hundred forty-five permanent positions were created through these funds. The General Assembly directed communities to use these funds to improve the current nurse-to-student ratio and not to use the funds to supplant existing funds supporting school nurse positions. Communities were to maintain current level of effort and funding for school nurses.

The General Assembly, in July of 2007, appropriated additional funds for school nurses. These school nurse positions will begin during the 2007-2008 school year and are not included in this report.

In 2006, Governor Michael Easley added 100 school nurses as part of Child and Family Service Teams in the schools. The Initiative provides recurring state funds to team 100 school nurses with an equal number of school social workers at 101 schools in 21 school districts across the state. The purpose of the Initiative is to provide school based professionals to screen and identify children who are potentially at risk of academic failure or out-of-home placement due to physical, social, legal, emotional, or developmental factors.

Through these state and local efforts to increase funding for school nurses, the number of LEAs meeting the recommended ratio of 1:750 more than tripled between the 2003-2004 and 2006-2007 school years, increasing from 10 to 31. Though all LEAs were able to support school nursing services during the 2006-2007 school year, a few school systems provided services for only a portion of their students (i.e., elementary/middle and/or students in exceptional children's programs). For example, 57 school nurses work only in the Exceptional Children (EC) program.

NORTH CAROLINA ANNUAL REPORT OF SCHOOL HEALTH SERVICES

Student enrollment in North Carolina increased this past school year by 22,668. Steadily increasing numbers of new students and difficulties in recruitment and retention of school nurses makes reducing the nurse to student ratio difficult. With increased funding from the NC General Assembly in July 2007, it is expected that the nurse to student ratio during school year 2007-2008 will once again improve. Although the number of budgeted positions has risen with local and state measures to allocate more funds for more school nurses, the numbers of filled positions and FTEs have not grown in direct proportion to the number of budgeted positions. Attracting and retaining a qualified school nurse workforce is an issue that affects not only schools but also health care agencies.

Facing a statewide (and nationwide) shortage of qualified school nurses, school nurse supervisors still were able to fill 91% (91 of 100) of the CFST (Child and Family Service Team) nurse positions and 98% (142 of 145) of the SNFI positions. Statewide, 26 of budgeted school nurse positions remained unfilled for all or most of the school year.

Employers of School Nurses

School nurses are primarily employed by their local education agencies (LEA). Other sources for school nurses in North Carolina include: local tax support, state appropriations, federal reimbursement, public health departments, hospitals, health care organizations and others. The fiscal agent for almost half of all school nurses employed in North Carolina is the LEA. The chart below shows the employing agency pattern among North Carolina public school nurses.

Number of School Nurses (including part-time nurses)

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
School Nurses	737	768	903	932	1,083

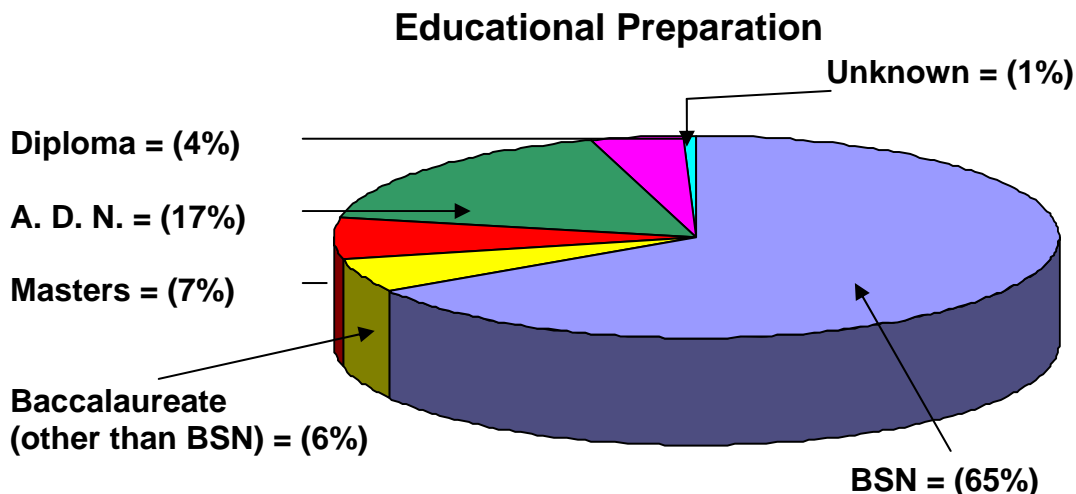
Employment by fiscal agent

Fiscal Agent	Percent of nurses employed
Local Education Agency (LEA)	49%
Health Department	24%
Hospital Health Care System	3%
Combination	24%

Educational Preparation of School Nurses

The demand for school nursing services has grown rapidly in recent years. Nursing personnel who work on a day-to-day basis with school children must have the expertise required to meet increasingly complex health needs. The American Academy of Pediatrics supports the goal of professional preparation for school nurses. Qualifications for the professional school nurse include licensure as a registered nurse and a baccalaureate degree.³ Among the survey respondents who listed their academic credentials, 78% reported a baccalaureate or higher degree.

³ American Academy of Pediatrics: Policy Statement "Qualifications and Utilization of Nursing Personnel Delivering Health Services in Schools (RE7089)."



B.S.N.—Bachelor of Science in Nursing
Diploma—Hospital Based Nursing
A.D.N.—Associate Degree in Nursing

National School Nurse Certification

The Department of Public Instruction requires that all school nurses hired by LEAs after July 1, 1998, hold national school nurse certification. Non-certified nurses hired after this date have three years from the date of employment to become certified. Currently, 43% of North Carolina nurses working in public schools hold national school nurse certification from either or both of the national certifying bodies: the American Nurses Credentialing Center (ANCC) or the National Board for Certification of School Nurses (NBCSN). During the 2006-2007 school year, 539 (63%) of the school nurses were within their first three years of being hired. A small number met degree and certification requirements upon hire; most continue to work and attend college part time in order to meet the requirements.

Each year, a growing number of North Carolina nurses obtain or renew certification in school nursing. The NBCSN reports that of all states, they certify the highest number in North Carolina, with Massachusetts second highest.

NOTE: Not all respondents completed all portions of the remainder of the survey. Some LEAs do not provide these services or collect data regarding services in a portion of these areas.

SCHOOL HEALTH SERVICES

Chronic Health Conditions

An increasing number of students with chronic health conditions attend school. Since these conditions can affect attendance, school performance, and the student's level of well being, school nurses work closely with students, their families, health care providers, and school staff to reduce the negative impact of illness on learning. Nurses serve as case managers, evaluate activities of daily living, and develop appropriate modifications for the learning environment. The percentage of public school students with chronic health conditions has risen almost every year for the past decade. The number and percent of students with reported chronic health conditions are illustrated in the table below.

Number and Percent of Students with Identified Chronic Health Conditions

School Year	Number and Percent
96-97	62,220 (5%)
97-98	78,387 (6%)
98-99	95,035 (8%)
99-00	114,765 (9%)
00-01	131,589 (11%)
01-02	129,329 (10%)
02-03	121,877 (10%)
03-04	161,559 (12%)
04-05	197,052 (15%)
05-06	209,718 (15%)
06-07	227,940 (17%)

Asthma, a major chronic illness among school age children, is the leading cause of school absenteeism. Nurses from all 115 LEAs reported:

- **83,440** students have asthma (a reported increase of more than 2,000 students over the prior school year),
- **49** LEAs have asthma education programs,
- **3,199** students use peak flow monitoring during the school day.

Diabetes legislation, requiring diabetic care managers in the schools, effective July 1, 2003, reflects concern for the **4,498** students with **diabetes** as reported by nurses in 115 LEAs.

- **3,610** monitor blood glucose at school,
- **2,024** receive insulin injections at school,
- **1,458** have insulin pumps (1,000 more than last year, reflective of the increased use of insulin pumps in the general population as well).

School-based, School-linked Health Centers

During school year 2006-2007, almost eight percent (7.7%) of adolescents in public schools had access to services of a school-based or linked health care center. Different from the school nurse office, these centers provide 75,261 clinical and counseling services to the students, from immunizations to nutrition and mental health counseling. Access to these centers is limited to those with parental permission, and the centers provide clinical services during the school day, limiting the out-of-school time required for these preventive and treatment services. Twenty-eight state supported school centers use limited funding to leverage additional resources at the local level. Partners in these centers include NC DPI, families, Division of Medical Assistance, private medical practices, local health departments and the NC Association for School Based and School Linked Health Centers.

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Private Duty Nurses/One-on-One Health Care Attendants

LEAs may contract with private duty nurses to assist medically fragile students during the school day. Thirty (30) LEAs reported contracting "private duty nurses/health care attendants."

For a more extensive list of the types of chronic health conditions that were managed at school, see Appendix A, page 15.

Pregnancy

School nurses reported an increase in the number of known pregnancies this past school year, from 4,072 in 2005-2006 to 4,422 in 2006-2007. This number reflects an increase of 350 over the previous year, and the increase was reflected across all grade levels.

Status of School Enrollment for Students Known to be Pregnant

	Elementary	Middle School	High School	Total
Known pregnancies	9	414	3,999	4,422
Students receiving homebound instruction due to pregnancy	2	153	1,427	1,582

Suicide and Homicide

Of particular importance were reports from school nurses regarding suicide attempts, suicide deaths, and homicides. There was an increase in number of deaths by suicide between school year 2005-2006 and school year 2006-2007. In 2005-2006 there were ten deaths from suicide; in 2006-2007 there were 30 deaths. A more positive number is seen in the number of known suicide attempts; they decreased from 389 in 2005-2006 to 370 in 2006-2007, continuing a small but potentially significant trend from the 401 known suicide attempts in 2004-2005.

A troubling number is seen in the number of deaths by homicide among public school students; 15 this past school year.

None of the deaths, either by suicide or homicide, occurred at school.

Death by Suicide/Homicide: School year 2006-2007

	Elementary	Middle School	High School	Total
Deaths from suicide	0	6	24	30
Suicides occurring at school	0	0	0	0
Death from homicide	1	1	13	15
Homicides occurring at school	0	0	0	0

Known Suicide Attempts: School year 2006-2007

	Elementary	Middle School	High School	Total
Known Suicide Attempts	21	136	213	370

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Do Not Resuscitate (DNR)

Some students who attend school have terminal health conditions. There are times when parents and medical providers have determined that school employees should administer no life saving measures. In these situations, a DNR order is prepared for the school. In 2006-2007, there were at least 40 students with DNR orders.

Student Tobacco Use

Schools communicate tobacco-free messages to young people through school policies, health education programs, and the day-to-day interactions among staff and students. As of July 2007, 86 LEAs (75%) had adopted a 100% tobacco free⁴ policy. By August 1, 2008, 100% of school districts must adopt, implement, and enforce a written 100% tobacco free policy, as a result of a measure passed by the N.C. General Assembly in July 2007.

School nurses also offer classes and programs to reinforce student restrictions against smoking and to encourage cessation. Among the 115 LEAs:

- **54** (47%) offered alternatives to suspension programs (in lieu of suspension for violating school rules),
- **52** (45%) offered smoking cessation classes.

Health Counseling

Students contact the school nurse for answers to questions ranging from normal growth and development to serious emotional and mental health concerns requiring referrals to mental health professionals. As the table below illustrates, **school nurses provided more than 65,373 individual health-counseling sessions.**

Individual Health Counseling Sessions

Health Counseling Issues	Elementary	Middle School	High School	Total
Child Abuse & Neglect	2,102	589	621	3,312
Grief & Loss	1,274	803	1,826	3,903
Pregnancy Related	25	2,373	6,889	9,287
Puberty/Hygiene/"growing up"	11,626	9,425	8,765	29,816
Substance Abuse	194	623	1,531	2,348
Suicide/Depression	1,490	3,278	4,325	9,093
Tobacco Use	226	711	1,934	2,871
Violence & Bullying	1,877	1,344	1,522	4,743
Total	18,814	19,147	27,415	65,373

Health Teaching

School nurses were involved in a variety of health teaching and instructional sessions including one-on-one, small groups, and classroom presentations. Classroom instruction included such topics as hygiene, first aid, wellness and fitness promotion, *Open Airways* and other asthma management programs, AIDS peer education, smoking

⁴ School policy totally prohibits tobacco use for all students, staff, and visitors in the school buildings and extends to the entire campus, vehicles, and all school events including outdoor events. The policy extends to hours after regular classroom schedules, 24 hours a day, seven days a week and includes off-campus school sponsored student events.

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prevention and cessation, violence prevention, puberty, prenatal and parenting programs. Instruction to faculty and staff included the topics of medication administration, infection control, OSHA blood borne pathogen regulations, CPR, first aid, and chronic disease management, including general and intensive training for the care of students with diabetes. The nurses also conducted health fairs and made presentations to parent organizations, and other civic and community groups. All in all, the nurses reported providing **26,696 programs and presentations** during the 2006-2007 school year.

The parents of these children also depend on school nurses for health guidance and assistance with minor childhood illnesses and injuries. During the 2006-2007 school year, nurses evaluated at school more than **162,360 student injuries and acute illnesses that had originated outside of school**. In addition to providing care and guidance, nurses assist families by locating medical and dental resources and referring students to these providers for the diagnosis and treatment of a wide variety of health problems.

Health Care Procedures at School

Some students with chronic illnesses, physical handicaps and/or disabilities require health care procedures to be performed during the school day. The nurses reported that at least **21,549 students** needed one or more of the following procedures: bladder catheterizations, suctioning, tracheostomy care, nasogastric or gastrostomy tube feedings, stoma care, blood glucose monitoring, oxygen therapy, and nebulizer treatments. The following list illustrates the diversity of some of the more commonly performed procedures at school.

Number of Students Requiring Specified Health Care Procedures

Health Care Procedure	Total
Central Venous Line	80
Glucagon Injection	1,912
Nebulizer Treatments	1,997
Shunt Care	212
Stoma Care	3
Suctioning	91
Tracheostomy Care	87
Tube Feeding	588
Use of Epi-pens	7,720
Bladder Catheterizations	359

The number of students requiring such health treatments during the school day increased over the number reported in the previous school year by 876. Leading the increase, as a percentage over the previous school year, is the need to provide tube feedings during the school day, both through gastrostomy tubes and naso-gastric tubes. The 40% increase was followed closely by the 35% increase in the use of tubes for urinary elimination. There was a 20% increase in the number of orders for injectible epinephrine (Epi-pen®) and a 9% increase in the number of orders for injectible glucagon (Glucagon®).

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Medications at School

During the 2006-2007 school year, nurses from 115 LEAs reported that **94,421 students received medication while at school**. Some received medication daily on a long term basis (27,990), others on short term (12,328) or emergency basis (54,103). Medications received most frequently on a daily basis include: Ritalin, Dexedrine, Lithium, and other psychotropic, controlled substances. Emergency drugs include rescue asthma inhalers, Glucagon, Diastat, epinephrine injections, and medications for migraine (such as Imitrex, Maxalt, Phenergan and Tylenol 3). Over the counter drugs include Claritin, Benadryl, Advil, Tylenol, anti-acids, sunblock, and others. The following table provides a ten-year overview of the numbers and percent of students receiving medications as reported by school nurses.

Number and Percent of Students Receiving Medications Administered at School

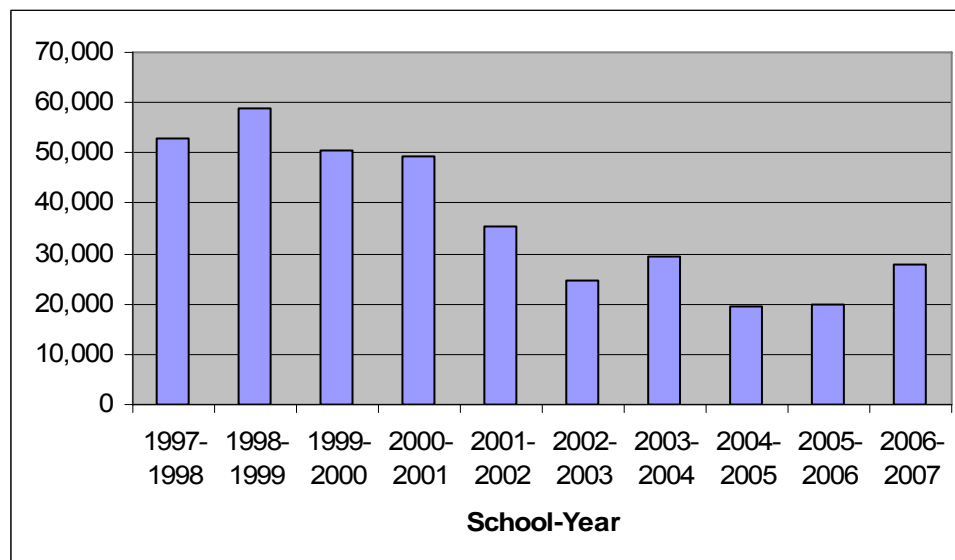
School year	# Students	Daily Medications
1997-1998	1,215,556	52,887 (4%)
1998-1999	1,226,748	59,048 (5%)
1999-2000	1,237,794	50,554 (4%)
2000-2001	1,243,442	49,303 (4%)
2001-2002	1,271,995	35,319 (3%)
2002-2003	1,279,468	24,477 (2%)
2003-2004	1,311,163	29,321 (2%)
2004-2005	1,332,009	19,541 (2%)
2005-2006	1,363,695	19,772 (1%)
2006-2007	1,386,363	27,990 (2%)

Administration of Medications

Secretaries, classroom teachers, and teacher assistants are primarily the school staff members who administer routine medications on a daily basis in the majority of school systems. Administration of medications to students by school staff is a serious responsibility. To ensure that school staff perform this task with safety and accuracy, it is essential that a school nurse be available to review and participate in the development of school policy and procedures; train and supervise teachers and other staff about all aspects of giving medications correctly; and serve as coordinator among parents, medical providers, and the school.

- School nurses in **99%** of the LEAs **provided formal training programs** for school employees who were designated to administer medications. They also **conducted audits** of medication records.

Number of Students Receiving Daily Medications at School



Health Care Coordination

The school nurse's role often extends beyond the school setting. Nurses serve as liaisons with physicians, dentists, community agencies, and families while supporting and caring for the health needs of students. More than **10,359 home visits** were conducted during the 2006-2007 school year to assist families with student health issues. This number reflects an increase of nearly 3,000 home visits.

Emergency Care

Injuries and illnesses are common occurrences in the school-aged population. Many minor incidents occur to students and staff during the course of the school day. School nurses reported 9,474 more minor injuries (but fewer serious injuries) in this school year over last year, with approximately **702,813 minor injuries** and 17,567 major injuries occurring at school during 2006-2007. Serious injuries are defined as medical emergencies requiring an Emergency Medical Service (EMS) call or immediate medical care plus the loss of one-half day or more of school.

Of the serious injuries reported, most (36%) occurred on the playground. Another 26% occurred in Physical Education classes and 24% in the classroom. For a complete breakdown of type and place of injury, refer to Appendix B page 16.

There were adverse outcomes for some of the students with serious injuries that occurred at school. Sixteen students were permanently disabled, and five died. Fewer of the injuries involved law enforcement, 1,081 this year compared to 1,692 in school year 2005-2006.

Because most school nurses cover a number of school buildings, very few school buildings have a school nurse on duty during the entire school day. Therefore, school nurses must assure that school personnel are trained to provide first aid in emergencies. **Seventy-four percent** of the LEAs reported having identified and trained school personnel as **First Responders** in every school building on campus.

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Health Screening, Referral, Follow-up, and Securing Care

Mass screenings or grade-wide screenings are often conducted with the assistance of trained volunteers or other health professionals (example: audiologists, dental hygienists, and speech/language pathologists).

Dental screenings and referrals are provided by DPH dental hygienists with follow-up on referrals conducted primarily by school nurses in conjunction with dental health professionals. In 2007, the school-based fluoride mouth rinse program resumed. Statewide, the Oral Health Section screened more than 210,000 children and helped about 14,500 children access dental offices for needed dental care last school year. Program staff provided about 15,000 dental sealants to school children. The CDC promotes community fluoridation and school-based dental sealant programs as the two most effective public health measures to reduce dental decay.

Working with NC Dental Society on the *Give Kids a Smile!* volunteer dental program, school children who qualify receive free dental care.

Vision screenings are conducted by school nurses as well as by other school staff and volunteers. School nurses follow-up on those referred for vision examination and in many cases are the persons who secure care for those unable to afford treatment.

Significant numbers of students did not complete care (defined as seeking or receiving medical or dental diagnosis and/or treatment). This reflects the need for additional staff to provide appropriate follow-up and care management services for students.

The following table shows the results of some of the mass screening projects that were conducted during the 2006-2007 school year.

Number of Students Screened

Screening	Screened	Referred	% Referred	Completed	% Completed ⁵
Blood Pressure	63,812	1,910	3%	1,547	81%
Dental	210,000	14,710	7%	8,571	58%
Hearing	156,692	5,428	3%	3,809	70%
Vision	474,476	35,487	7%	25,682	72%
Other	122,501	8,265	7%	5,595	68%

⁵ Completed treatment or follow-up

HEALTH POLICIES

Policies are essential to guide the development and implementation of coordinated school health programs. School nurses cited the presence of written, school board approved policies in the following key areas:

Medication Administration	99%
Prevention/Control of Communicable Disease	98%
Reporting of Student Injuries	77%
Provision of Emergency Care	77%
100% Tobacco Free Campuses	75%
School Nurse Assessment of Special Health Care Needs of Students in Exceptional Children (EC) Program	70%
Maintenance of Student Health Records	63%
Identification of Students with Health Care Needs/Conditions	56%
Screenings	54%
Transportation of Students with Health Care Needs	50%
Referral/Follow-up of Health Related Concerns	46%

COMMUNITY INVOLVEMENT IN SCHOOL HEALTH SERVICES

Community involvement contributes to the quality and effectiveness of school health programs and services. School nurses encourage and promote community involvement through:

- establishment of school health advisory councils,
- development of inter-agency planning and written agreements,
- recruitment of local physician advisors, and
- development of parent-teacher (PTA/PTO) health subcommittees.

All of the local education agencies reported having School Health Advisory Councils. Seventy-nine have physician advisors for their school health programs. Of those, 28 are family practice physicians and 33 are pediatricians.

North Carolina's more than 1,000 school nurses are employed in every LEA in the state and serve nearly 1.4 million public school children every day. State and local efforts to provide school nursing services at the recommended ratio of 1 nurse per 750 students or less, face an uphill battle with increased enrollment and the increased special health care needs of students. Working collaboratively throughout the public health and school health sectors, advances continue to be made to provide quality school health services in North Carolina.

DATA SOURCES

NC Annual School Health Nursing Survey: Summary Report of School Nursing Services 2006-2007
NC Division of Public Health • Department of Health and Human Services
Public Schools of North Carolina • Department of Public Instruction

**Appendix A: Chronic Health Conditions
School-Year 2006-2007**

Condition	Elementary	Middle	High	Total
ADD/ADHD	28,511	13,784	9,160	51,455
Addison's Disease	29	13	24	66
Allergies (severe)	10,749	4,001	3,584	18,334
Anorexia/Bulimia	37	116	251	404
Asperger's Syndrome	1,385	262	173	1,820
Asthma	47,277	20,275	15,888	83,440
Autism	2,972	1,025	856	4,853
Cerebral Palsy	1,381	598	502	2,481
Cancer	377	156	237	770
Cardiac condition	2,254	1,221	1,312	4,787
Cystic Fibrosis	147	78	83	308
Cytomegalovirus	51	13	11	75
Diabetes Type I	1,072	1,008	1,436	3,516
Diabetes Type II	230	316	436	982
Down's Syndrome	706	259	320	1,285
Gastrointestinal disorders	2,090	1,127	1,123	4,340
Genetic conditions	971	398	380	1,749
Hearing Impaired	1,503	643	651	2,797
Hemophilia/Bleeding disorder	364	175	193	732
Hepatitis B	15	2	11	28
Hepatitis C	8	6	5	19
Hypertension	238	351	569	1,158
Hypo/Hyperthyroidism	150	135	175	460
Migraine headaches	2,612	2,530	3,859	9,001
Multiple Sclerosis	19	15	34	68
Muscular Dystrophy	180	59	80	319
Neuromuscular Condition	401	197	243	841
Orthopedic disability (permanent)	1,123	584	670	2,377
Psychiatric Disorder	3,266	2,701	2,814	8,781
Renal Condition	895	439	406	1,740
Rheumatoid Arthritis	253	155	185	593
Seizure Disorder	4,158	1,766	1,854	7,778
Sickle Cell Disease	620	290	287	1,197
Spina Bifida	252	125	119	496
Substance Abuse	12	385	1,351	1,748
Traumatic Brain Injury	220	83	168	471
Visually Impaired	1,164	412	386	1,962
Other (Specify)	2,606	1,087	1,016	4,709
Total	120,298	56,790	50,852	227,940

Appendix B:
Reported Injuries in North Carolina Public Schools
requiring EMS response or immediate care by physician/dentist AND loss of 1/2 day or more of school
School Year 2006-2007

Type of Injury	Bus	Hallway	Class- room	Play-ground	PE Class	Shop	Rest- room	Lunch- room	Total #	Total %
Abdominal/Internal Injury	4	15	40	65	51	0	2	4	181	1%
Anaphylaxis	9	12	109	58	28	0	2	25	243	1%
Back Injuries	5	18	48	141	125	1	3	9	350	2%
Dental Injury	16	46	137	309	159	2	8	13	690	4%
Drug Overdose	14	15	98	12	28	0	24	4	195	1%
Eye Injuries	22	63	234	273	157	14	4	19	786	4%
Fracture	28	128	159	1,154	659	8	15	14	2,165	12%
Head Injuries	47	158	265	677	538	9	59	46	1,799	10%
Heat Related Emergency	1	12	43	111	64	3	0	9	243	1%
Laceration	61	209	577	850	362	127	43	51	2,280	13%
Neck Injuries	8	23	42	23	57	0	0	2	155	1%
Psychiatric Emergency	13	43	474	40	55	0	16	19	660	4%
Respiratory Emergency	35	122	611	234	201	0	7	18	1,228	7%
Seizures	47	107	713	71	79	4	10	30	1,061	6%
Sprain or Strain	68	262	446	2,312	1,878	15	56	36	5,073	29%
Other (specify)	30	36	203	77	74	10	21	16	467	3%
Total #	408	1,269	4,199	6,407	4,515	193	270	315	17,576	100%
Total %	2%	7%	24%	36%	26%	1%	2%	2%	100%	

Appendix C:
North Carolina School Nurse to Student Ratio
By Local Education Agency
School Year 2006-2007

County/LEA (SY 2006-2007)	Ratio (nurse:students)
Alamance	1116
Alexander	1421
Alleghany	760
Anson +	463
Ashe	1078
Avery	1144
Beaufort	2370
Bertie +	401
Bladen	1688
Brunswick	1113
Buncombe County Schools	2294
Asheville City Schools	1251
Burke	1097
Cabarrus County Schools	1062
Kannapolis City Schools +	708
Caldwell	1121
Camden +	603
Carteret	1368
Caswell	1627
Catawba	1063
Hickory City Schools	1122
Newton Conover Schools +	728
Chatham	1868
Cherokee +	454
Edenton-Chowan +	643
Clay	1314
Cleveland	1407
Columbus County Schools	1386
Whiteville City Schools	862
Craven	770
Cumberland	2199
Currituck +	671
Dare +	486
Davidson County Schools	3983
Lexington City Schools	1059
Thomasville City Schools +	645
Davie +	722
Duplin +	635
Durham	1373
Edgecombe	1494
Winston-Salem -Forsyth	1938
Franklin	1134
Gaston	1590
Gates	1002
Graham +	486
Granville	2166

Appendix C:
North Carolina School Nurse to Student Ratio
By Local Education Agency
School Year 2006-2007

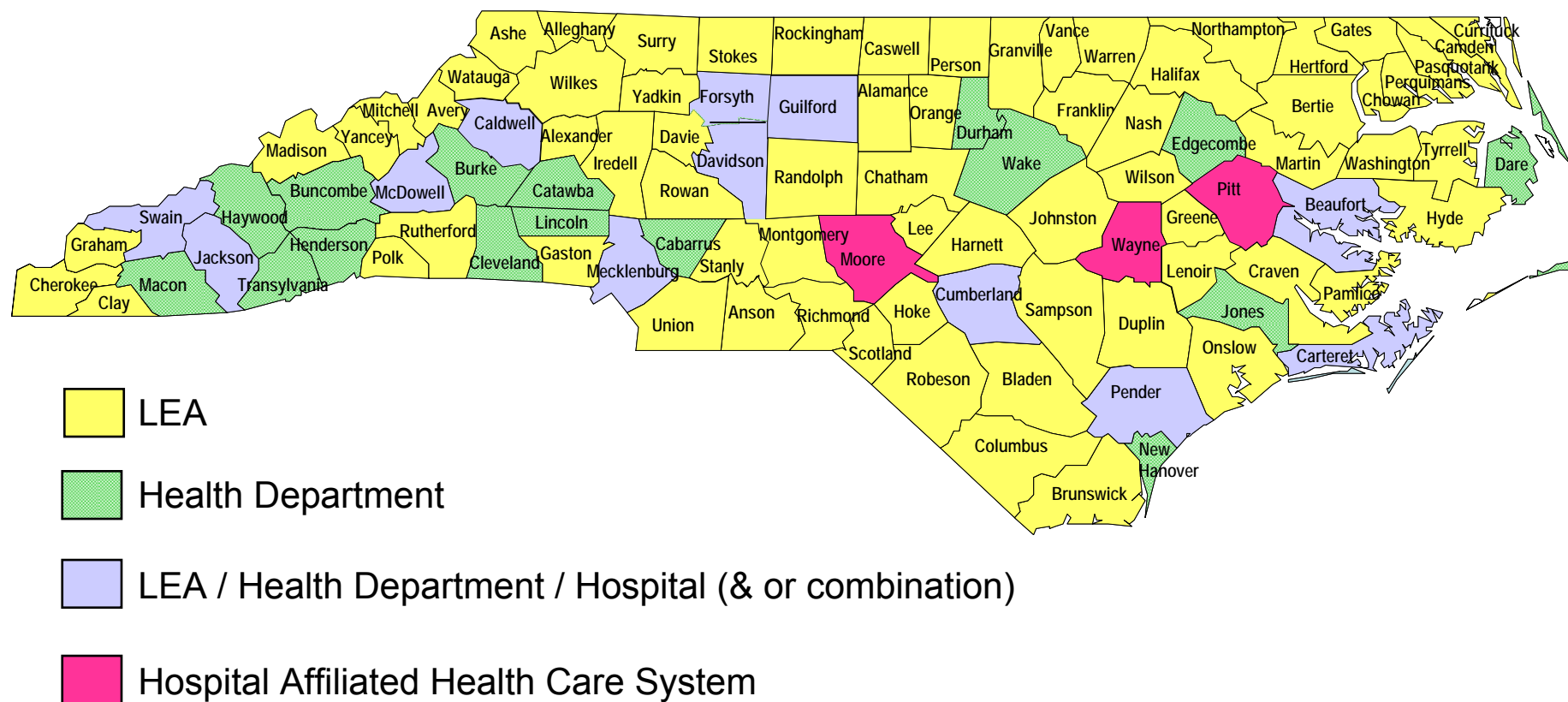
County/LEA (SY 2006-2007)	Ratio (nurse:students)
Greene +	407
Guilford	2221
Halifax County Schools +	619
Roanoke Rapids City Schools	983
Weldon City Schools +	507
Harnett	2013
Haywood	880
Henderson	2096
Hertford +	694
Hoke	916
Hyde +	209
Iredell-Statesville Schools	1443
Mooreville City Schools	1603
Jackson	1029
Johnston	2286
Jones +	659
Lee	1223
Lenoir	1961
Lincoln	1687
Macon	1046
Madison	1301
Martin +	709
McDowell	870
Charlotte-Mecklenburg	1412
Mitchell	1126
Montgomery	1119
Moore	2001
Nash	1120
New Hanover +	697
Northampton	1018
Onslow	1329
Orange County Schools +	556
Chapel Hill-Carrboro Schools +	694
Pamlico +	262
Elizabeth City-Pasquotank	1206
Pender	1225
Perquimans +	590
Person	993
Pitt	1462
Polk	2451
Randolph County Schools	2294
Asheboro City Schools	1128
Richmond	847
Robeson	1139

Appendix C:
North Carolina School Nurse to Student Ratio
By Local Education Agency
School Year 2006-2007

County/LEA (SY 2006-2007)	Ratio (nurse:students)
Rockingham	2047
Rowan	1594
Rutherford	1980
Sampson County Schools	1353
Clinton City Schools	1004
Scotland +	524
Stanly	1921
Stokes	1826
Surry County Schools	1237
Elkin City Schools	854
Mt. Airy City Schools +	586
Swain +	303
Transylvania	1872
Tyrrell +	616
Union	1760
Vance +	723
Wake	2163
Warren	961
Washington +	713
Watauga	1495
Wayne	1277
Wilkes	1170
Wilson	2483
Yadkin	1230
Yancey	1008

Administrative Responsibility for School Nursing Services

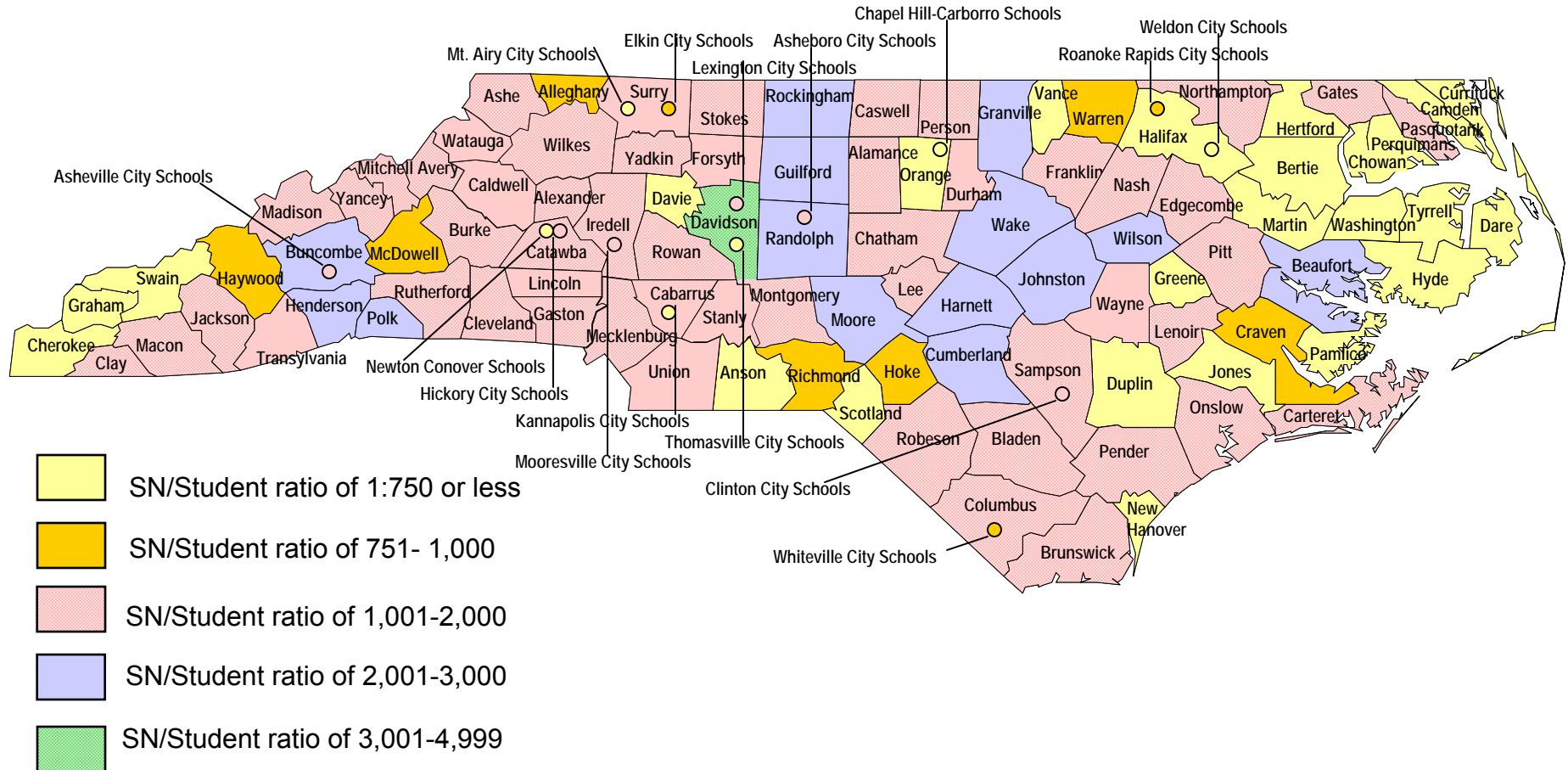
June 2007



Note: Most counties do not have sufficient numbers of school nurses. More information on each county is available.

Updated: September 2007 Source: NC Annual Survey of School Health Services • NC DHHS

School Nurse/Student Ratio SY 2006 - 2007



Note: The standard school nurse to student ratio of 1:750 has been adopted by the N.C. Public Health Task Force, the N.C. Department of Public Instruction and the N.C. Division of Public Health and is based on recommendations made by the American Academy of Pediatrics, the Centers for Disease Control and Prevention, and the National Association of School Nurses.

Source: NC Annual Survey of School Health Services
NC DHHS August 2007